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Numerical Investigation on Heat Transfer Enhancement of Solar Air Heater using Sinusoidal Corrugations on Absorber Plate

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Highlights

- The presence of sinusoidal corrugations provides higher flow disturbances leading to significant enhancement in heat transfer.
- The maximum average increase in thermal efficiency is found to be about 12.5% as compared to base model.
- The aspect ratio and wavelength of corrugation have significant influence on the thermo-hydraulic performance of solar air heater.
- Sinewave corrugations are found to provide higher effective efficiency only at lower flow rate conditions.

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